REMARKS:

1)   This is a supplement to the Response of October 12, 2007 in reply
     to the Advisory Action of October 24, 2007.   In view of the
     accompanying Request for Continued Examination, please withdraw
     the Final Status of the Office Action of July 12, 2007, please
     enter the amendments and consider the remarks of the Response of
     October 12, 2007, and please enter the amendments and consider
     the remarks of the present Supplemental Response.   The
     examination shall be continued on the basis of the amended claims
     and the remarks presented in the Response of October 12, 2007 and
     further in this Supplemental Response.

2)   This is a Statement of Substance of Interview.  On October 12,
     2007, the Examiner and the undersigned attorney conducted a
     Telephone Interview regarding amendments and arguments to be
     presented in the Response of October 12, 2007.  The substance of
     the Telephone Interview is accurately and completely set forth
     in the Examiner's Interview Summary dated October 25, 2007.  This
     Statement of Substance of Interview is being submitted to comply
     with the requirement set forth in the "boilerplate" text of the
     last paragraph of the Interview Summary of October 25, 2007.

3)   A few editorial amendments have been made in the specification
     to use the typical art-recognized term "control point" as an
     alternative to the term "support point" or "way point" in the
     original specification of this application.  A person of ordinary
     skill would readily recognize the equivalence of this alternative

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terminology, so that this amendment does not introduce any new matter. Also, a typographical error has been corrected at page 8 line 26. Entry of the specification amendments is respectfully requested.

4) The claims have been further amended to recite that the splines are calculated as polynomials directly from the control points, and that the motion of the milling tool is controlled directly based on these splines as polynomials. This amendment is supported by the original disclosure and does not introduce any new matter (for example see page 9 lines 13 to 15 and original claim 10 line 7). Entry of the claim amendments is respectfully requested.

5) Please consider the remarks of the Response of October 12, 2007 in connection with the present further remarks.

It is an important feature of the present invention that the splines are generated directly from the control points and then the splines are used directly to control the motion of the milling tool along the tool path defined by the splines. Particularly, the splines are generated as polynomials directly from the control points, and then these polynomial splines are used directly to control the tool path of the milling tool. In this regard see the specification at page 3 lines 3 to 8, page 6 line 24 to page 7 line 6, page 7 lines 15 to 17, page 9 lines 1 to 21, and the last paragraph of original claim 1. Since the splines are defined in a polynomial format, these polynomial splines can be used directly as a control input of the control

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<u>arrangement for controlling the milling tool</u>. This is a very simple and efficient method and apparatus making very direct use of polynomial splines, which are generated as polynomials directly from the data points, and are used as polynomials directly for controlling the motion of the milling tool.

This simple, efficient and direct generation and use of polynomial splines according to the invention is quite different from the use of non-uniform rational B-splines (NURBS) according to EP 1,235,126 (Hirai et al.). <u>The NURBS according to Hirai et al. cannot be used directly for controlling the motion of the milling tool</u>, but rather the NURBS must be further processed and converted into a control signal that can be used by the control arrangements of the milling tool.

Particularly, the splines of the present invention are polynomial splines, whereas <u>the NURBS splines of Hirai et al. are **not** defined by polynomials (see paragraph 0004: "it is a characteristic feature that the NURBS curve uses a rational expression in defining a curve while other curves use a polynomial"</u>).

It is also recognized by persons of ordinary skill in the art, that NURBS-based formats are distinct from polynomial formats used for machining controls (see <u>www.mmsonline.com/articles/109704.html</u>: "... (one company's product) has the capability to post process programs to the NURBS-based formats used respectively by Siemens and GE Fanuc, as well as polynomial formats also used by Siemens and now Heidenhain").

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Because of this, the NURBS-based splines cannot be used directly for controlling the motion of the milling tool, but rather, a further set of control points or target points is derived from the NURBS, and these target points are ultimately used by the milling machine to control the milling tool with short linear steps between successive target points (see www.mmsonline.com/articles/079901.html: "... at the level where the cutting tool hits the workpiece, the movement is still in straight lines. The CAD model may be represented by NURBS, the CNC may read tool paths in terms of NURBS, but when the CNC communicates movement commands to the processor controlling a given axis, it does this by specifying a target point. That is, a target toward which the axis advances in a straight line. Granted, the straight line is very tiny.... In fact, the straight lines are so short, they can produce a cut that looks in every way as if the resulting tool path had followed smooth curve"). That is directly contrary to the present invention, in which the polynomial splines are used directly to control the motion of the tool, i.e. the splines are provided in a polynomial format to the respective axis controllers, which accordingly move the tool.

For the above reasons, the present inventive method and apparatus are significantly different from that disclosed by Hirai et al., and therefore the rejection of claims 16 to 21 as anticipated by Hirai et al. is respectfully traversed and requested to be withdrawn.

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6) Favorable reconsideration and allowance of the application, including all present claims 16 to 21, are respectfully requested.

Respectfully submitted,
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Enclosures:
Transmittal Cover Sheet
RCE
Term Extension Request
Form PTO-2038

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CERTIFICATE OF FAX TRANSMISSION:

I hereby certify that this correspondence with all indicated enclosures is being transmitted by telefax to (571) 273-8300 on the date indicated below, and is addressed to: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450.

_Walter F. Fasse_ 11/9/07

Name: Walter F. Fasse – Date: November 9, 2007

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